



**Emission  
Inventory  
Improvement  
Program**

U

P

D

A

T

E

September 1996

## ***EIIP—The Leading Edge in Emissions Estimation***

This mailing of *EIIP UPDATE* will continue to explore various aspects of the Emission Inventory Improvement Program. As discussed previously, EPA has specific requirements (related to inventories and emissions estimates) mandated

in the 1990 Clean Air Act Amendments for which it has responsibility. However, there are other areas in which EPA is seeking active participation and leadership by state and local agencies. EIIP is providing such a forum. In this issue of the *Update*, each of the EIIP working committees provides a brief description of the products that are available or will be in the near future.

## **Who Should Read EIIP UPDATE. . .**

Emission inventories influence decisions made throughout an environmental agency. Thus, it is incumbent on those that use emissions information to appreciate its strengths and limitations. Understanding the products of EIIP will enable, not only **Emission Inventory** developers, but those in **Title I, Title II, Title III (Toxics), Title V, and Enforcement** programs to better use inventory data. Those in the **Data Management** organization should understand and make preparations to participate in the innovative procedures being developed by EIIP for exchanging emissions data.

# ***The Latest Developments***

## **EIIP on the Road**

The EIIP team has begun its outreach program to introduce the inventory community to the Emission Inventory Improvement Program. EPA Regional Offices 5, 6, 9, and 10 hosted meetings of state and local agency representatives in their respective regions. The EIIP team, consisting of state personnel and EPA representatives, conducted a one- to two-day seminar on the EIIP. Information was presented to attendees on the program concepts, philosophies, and produced material.

Each session has been very well attended. Attendees have been encouraged to obtain available documents, become familiar with the material, and position themselves to begin using the procedures the next time emission estimates are needed. To identify procedural errors and to keep all documents current, the EIIP team stressed the need for feedback from participants.

As federal travel funds become available, visits are planned to Regions 1, 2, 3, and 4. State and local agency representatives interested in attending an orientation should notify their EPA Regional Office emission inventory contact.

## **EIIP on the World Wide Web**

The EIIP is now live on the Internet. The home page can be reached by using the address “<http://www.epa.gov/oar/oaqps/efig/eiip/>”. The page will be updated periodically with emission inventory news and with notifications of the availability of new estimation procedures.

Users are urged to register on the List Server to receive E-mail notification when new material is posted. Because of the large volume of material being produced by EIIP, the home page will become the primary means of distributing new documents and updates to existing procedures. The *EIIP UPDATE* is also available for downloading.

# *The Role of EIIP Documents in EPA*

EPA is required by Congress, through the CAA and various amendments, to ensure that emissions data are collected. EPA has met this obligation in the past by issuing guidance to state and local agencies on what data are needed, the frequency with which it is to be collected, and how it is to be gathered. These instructions have been contained in two types of documents: “requirements” documents and “procedures” documents.

“Requirements” documents (e.g., *Emission Inventory Requirements for Carbon Monoxide State Implementation Plans*, EPA-450/4-91-011, March 1991) reflect the responsibility EPA has to interpret the intent of Congress and to issue instructions to state and local agencies regarding what actions are required to meet a particular mandate. This category of documents is outside the scope of the EIIP, and EPA will continue to assume responsibility to develop and issue these types of materials.

“Procedures” documents (e.g., *Procedures for Emission Inventory Preparation, Volume I*, EPA-450/4-81-026a, September 1981) will now be produced differently. EPA has entered into a joint effort with state and local agencies and other groups to develop guidance on how emissions data are to be gathered and reported. Through this joint effort, the EIIP will decide which procedures are appropriate for it to consider and which are research or policy topics to be left to EPA. EIIP will then implement a program to develop preferred and alternative procedures for those areas selected. These joint discussions will result in procedures guidance documents that are acceptable to both state and local agencies and EPA.

Technical documents developed by EIIP will be recommended to EPA management to be issued as official EPA guidance. In the unlikely event that EPA and state and local agencies cannot reach agreement on a particular procedure, EPA must reserve the right to meet its legal obligations.

## *The EPA Position on EIIP*

In a March 5, 1996, memo from John Seitz, Director of the Office of Air Quality Planning and Standards (OAQPS) to state air directors, he said about EIIP:

The Emission Inventory Improvement Program (EIIP) has begun its third year of work. This group of state, local, industry, and EPA representatives, funded with 105 grant funds through STAPPA/ALAPCO, has assembled an extensive list of guidance documents. Many others are still in development or are to be produced. Each of the seven committees within EIIP is addressing a specific area of the emissions gathering and reporting process.

At its first meeting in November 1993, I stated that

EPA would adopt, as its guidance, any documents produced and approved by EIIP. Following up on that statement, I am now establishing the policy that **EIIP documents will take preference, where applicable, over existing OAQPS inventory guidance issued prior to the 1990 base year effort.** Since EIIP procedures do not yet cover all source categories, some current estimation methods need to be retained. I encourage you to become familiar with the new documents. Working with your EPA Regional Office contact, you should begin downloading the various chapters, as they become available for review, and to begin considering them for adoption by your agency. These documents can be found on the CHIEF Bulletin Board under the EIIP heading.

I find it very encouraging that state and local agencies and EPA have been able to jointly develop

these procedures. I look forward to receiving data based on the inventory methods currently available from EIIP and to the continued cooperative effort as new ones are written. While EIIP has accomplished much over the last two years, there are still many source categories that need attention. I invite you to join me in continuing to support this effort.

## ***What about AP-42?***

Do EIIP guidance documents replace *AP-42*? **NO!** Documents produced by the EIIP do **NOT** and are not intended to replace *AP-42*. The documents are complementary.

Upon reading, one should see clear differences between the two documents. While both contain small amounts of overlapping material, they are written for different purposes and for slightly different primary audiences. The function of the EIIP procedures documents is to provide guidance on how to estimate emissions. The EIIP documents present a brief overview of the process to be inventoried and describe input variables needed to estimate emissions. There is a major section devoted to calculations.

The *AP-42* document contains more process description detail. It includes complete reference sections and only briefly discusses required calculations. An analogy for comparing the two documents is like equating *DOS for Dummies* and the *MS DOS Manual*. *DOS for Dummies* is written so that the

user can make the computer work. The *MS DOS Manual* is for those who want to understand the details of both how and why the computer works. Similarly, EIIP documents provide details on how and what to do to make an emission estimate. *AP-42* provides process information in greater detail for the person requiring such knowledge.

The EIIP documents provide the reader with a selection of methods for making emission estimates, what data are needed to make the estimates, and where to find the needed information. *AP-42* is the current primary source of emission factors (referenced by the EIIP documents) and is also a companion reference for those who want a more complete description of a particular process.

It has been suggested that the *AP-42* and EIIP documents should be combined. Such an action would diminish the usefulness of each. Placing EIIP procedures in *AP-42* would defeat the purpose of providing simple, straightforward instructions to the user community. Rather than getting brief, to the point, instructions on how to make an emission estimate, a user would be faced with the complete and comprehensive, state-of-the-science knowledge on a particular source. However, as technology allows, the two documents will be

electronically linked (providing the user with the best of both documents). For example, the documents will be linked so that one could immediately link to an *AP-42* factor what is needed to implement an EIIP preferred or alternative estimation method.

Combining the two would also diminish the usefulness of *AP-42*. Now it is considered a complete reference for emission factors. Adding calculations and other miscellaneous information would detract from its main mission and make it more difficult to keep current.

Each document fills a requirement within the inventory community. The overlap in process descriptions is positive in the sense that it acts as a bridge between the two sources of information.

## ***EIIP Products***

EIIP develops its products through the efforts of seven working committees. Two of these committees, the Biogenics Committee and the Governmental

Interactions Committee, have completed their work. Each of the committees presents below a summary of their efforts, and a listing of products completed and in progress.

## **Point Sources Committee**

- ◆ Address needs for updated and improved point source emissions estimation guidance covering:
  - Completeness
  - Accuracy
  - Consistency
  - Quality assurance
  - Data organization
  
- ◆ Source category progress
  - Chapter 1: Introduction (in progress)
  - Chapter 2: Boilers (completed)
  - Chapter 3: Hot-Mix Asphalt Plants (completed)
  - Chapter 4: Equipment Leak Fugitives (completed)
  - Chapter 5: Wastewater Collection and Treatment (in external review)
  - Chapter 6: Semiconductor Manufacturing (in progress)

- Chapter 7: Surface Coating Operations (in external review)
- Chapter 8: Paint Manufacturing (in external review)
- Chapter 9: Primary and Secondary Metals Production (in progress)
- Chapter 10: Oil and Gas Field Production and Processing (in progress)

## **Area Sources Committee**

### **◆ Committee objectives**

- Achieve consistency among inventories
- Provide flexibility in inventory development at the agency level
- Identify new and innovative methods
- Support planning and QA/QC in inventory development

### **◆ Source category progress**

- Chapter 1: Introduction (in progress)
- Chapter 2: Residential Wood Combustion (completed)

- Chapter 3: Architectural Surface Coating (completed)
- Chapter 4: Dry Cleaning (completed)
- Chapter 5: Consumer/Commercial Solvents (completed)
- Chapter 6: Solvent Cleaning (in progress)
- Chapter 7: Graphic Arts (in external review)
- Chapter 8: Industrial Surface Coating (in progress)
- Chapter 9: Pesticide Application (in progress)
- Chapter 10: Agricultural Operations (in progress)
- Chapter 11: Gasoline Marketing (in progress)
- Chapter 12: Petroleum Vessel Loading/Unloading (in progress)
- Chapter 13: Auto Refinishing (in progress)
- Chapter 14: Traffic Markings (in progress)
- Chapter 15: Landfills (in progress)
- Chapter 16: Residential Open Burning (in progress)
- Chapter 17: Asphalt Paving (in progress)

## **Biogenic Sources Committee**

- ◆ Nonanthropogenic sources addressed include:

- Sources of VOCs:
  - Trees and vegetation
  - Oil and gas seeps
- Sources of NO<sub>x</sub>:
  - Microbial activity in soils; lightning
- Sources of methane:
  - Microbial activity in anaerobic environments
  - Digestive processes in termites and ruminants

◆ Biogenic sources document is complete; organization is as follows:

- Chapter 1: Introduction
- Chapter 2: Source Category Definition
- Chapter 3: Available Methods
  - Biogenics Sources, Lightning, Oil and Gas Seeps
  - Uncertainty of Biogenic Estimates
  - QA/QC
- Chapter 4: Preferred Method for Estimating Natural Source Emissions

- Chapter 5: Alternative Methods for Estimating Emissions
- Chapter 6: References and Bibliography
  
- ◆ Estimation models addressed include:
  - BEIS2
  - PCBEIS2.2
  - BIOME
  - BEIS
  - Yienger and Levy method

## **Mobile Sources Committee**

- ◆ Current work has been primarily focused on on-road mobile sources
- ◆ Most attention has been on estimates developed using MOBILE or EMFAC models
- ◆ Committee emphasis is being placed on standardizing alternative methods for development of locality-specific model input data
- ◆ Document “Methodology for Gathering Locality-Specific Inventory Data” has been completed

- ◆ Future efforts to focus on top-down validation of the MOBILE model and nonroad mobile inventory issues

## **Quality Assurance Committee**

- ◆ Committee goals are to:
  - Improve, consolidate, and document preferred and alternative QA/QC practices and procedures
  - Build upon the idea that a well-developed and implemented QA program fosters confidence in the inventory
- ◆ QA procedures document will include:
  - Chapter 1: Introduction: The Value of QA/QC (completed)
  - Chapter 2: Planning and Documentation (completed)
  - Chapter 3: General QA/QC Methods (completed)
  - Chapter 4: Evaluating the Uncertainty of Emission Estimates (completed)

- Chapter 5: Model QA Plan (in progress)
- ◆ Overall QA guidance being based on:
  - Reality checks
  - Peer review
  - Sample calculations
  - Computerized checks
  - Sensitivity analyses
  - Statistical checks
  - Independent audits
  - Emissions estimation validation
- ◆ The Data Attribute Rating System (DARS) method is being enhanced through the development of a software applications system.

## **Data Management Committee**

- ◆ Goal is to develop and facilitate an improved data exchange mechanism

for the emission inventory community

- ◆ Committee approach to reach this goal is to:
  - Build consensus among states and local agencies, EPA, and industry
  - Agree on a data transfer protocol
  - Standardize data transfer and definitions
  - Build working relationships, not regulations
  - Provide options and opportunity to achieve more for less \$\$
  - Make use of emerging technology
- ◆ A draft data model has been developed and is under review; final version planned for fall 1996.
- ◆ A data transfer format is currently under development based on the Electronic Data Interchange (EDI) X12 Standard.
- ◆ Eventual committee products (none finalized yet) include:
  - User's Guide to Data Model

- User's Guide to Data Transfer Format
- Implementation Guideline for EDI Translation
- "Shopper's Guide" to EDI Translation Software
- Prototype Demonstration
- User Training on Data Model and Data Transfer Format

## *In the Next Mailing*

The next *EIIP UPDATE* will describe the plans being developed by the Data Management Committee for exchange of data. The protocols being developed facilitate exchange not only between states and local agencies and EPA, but also exchange between different state and local agencies, and between industry and state and local agencies.

## ***For Additional Information...***

If you have questions about EIIP, its mission, or how it will affect your program, please call one of the EIIP team members on the contact list. For questions on anything in this *UPDATE*, please contact:

Steve Bromberg  
Emission Factor and Inventory Group, MD-14  
U.S. Environmental Protection Agency  
Research Triangle Park, North Carolina 27711  
919-541-1000 (voice)  
919-541-0684 (fax)  
BROMBERG.STEVE@EPAMAIL.EPA.GOV (e-mail)

## EIIP Contact List

<b>Steering Committee</b>	
Steve Bromberg (EPA)	(919) 541-1000
Roger Westman (Allegheny County Health Department)	(412) 578-8103
<b>Point Sources Committee</b>	
Dennis Beauregard (EPA)	(919) 541-5512
Bill Gill (Texas Natural Resources Conservation Commission)	(512) 239-5750
<b>Area Sources Committee</b>	
Chris Nguyen (California Air Resources Board)	(916) 322-7141
Charles Mann (EPA)	(919) 541-4593

<b>Mobile Sources Committee</b>	
Rob Altenburg (Pennsylvania Bureau of Air Quality)	(717) 787-4310
Greg Janssen (EPA)	(313) 668-4285
<b>Biogenic Sources Committee</b>	
Tom Pierce (EPA)	(919) 541-1375
<b>Quality Assurance Committee</b>	
William Kuykendal (EPA)	(919) 541-5372
Tom Ballou (Virginia Department of Environmental Quality)	(804) 698-4406

<b>Data Management Committee</b>	
John Slade (Pennsylvania Department of Environmental Resources)	(717) 783-9476
Lee Tooly (EPA)	(919) 541-5292
Bill Benjey (EPA)	(919) 541-0821
<b>Governmental Interactions Committee</b>	
Thomas M. Allen (New York Department of Environmental Conservation)	(518) 457-7230
Dave Mobley (EPA)	(919) 541-4676